

**Remarks/Arguments:**

Claims 1-26 stand rejected. Claim 2 has now been canceled.

**Section 102 Rejections:**

Claims 1, 2, 5, 16 and 17 have been rejected as being anticipated by James. Applicants respectfully submit that this rejection is overcome for the reasons set forth below.

Amended claim 1 now includes features which are not suggested by the cited reference, namely:

- a plurality of radiating elements arranged as **orthogonal pairs in a herringbone pattern**. . .
- each radiating element includes **a dipole formed as a pair of dipole microstrips extending from a pair of launch points**.

Applicants have now incorporated features of claim 2 into amended claim 1. Claim 2 has been canceled.

The features of amended claim 1 may be seen, for example, in FIG. 1. As shown, radiating elements 8 are arranged as **orthogonal pairs in a herringbone pattern**. Each radiating element 8 includes a dipole formed as a pair of dipole microstrips, such as a pair of dipole microstrips 10a and 10b, or a pair of dipole microstrips 10c and 10d. Furthermore, each dipole is formed as a pair of dipole microstrips **that extend from a pair of launch points (launch points 13 and 14, for example)**.

It is submitted by applicants that launch points 13 and 14, for example, are two separate points which are not connected to each other. Had these two launch points been connected to each other, there would be, if possible, only one launch point (because launch points 13 and 14 would then be one single point, if connected to each other).

The reference to launch points 13 and 14 and the reference to a pair of dipole microstrips 10a and 10b may be found, for example, in the specification at page 7, lines 10-16.

James discloses a microstrip antenna array that includes several elements that are attached to a feeder strip. The elements are shown in FIG. 1 as elements 4a-4e. All the elements shown in FIG. 1 are connected to one continuous feeder strip denoted as 3, 5, or 6. A different configuration of these elements is shown in FIG. 7, as elements 74a-74e. The feeder strip shown in FIG. 7 (denoted as 73) is similar to the feeder strip shown in FIG. 1 as 3, 5, or 6. Furthermore, James' feeder strip is formed as a **single dipole microstrip that may be considered as extending from a single launch point**, because launch points 3, 5, and 6 are all one single launch point. Stated differently, feeder arms 3, 5, and 6 are connected to a single point, thereby providing only a single launch point).

James, therefore, does **not** disclose the features of amended claim 1, namely, that each radiating element includes **a dipole formed as a pair of dipole microstrips extending from a pair of launch points**. Stated differently, James does not disclose or suggest dipoles that are formed as two dipole microstrips extending from two launch points.

Favorable reconsideration is requested for amended claim 1 and its dependent claims 5, 16 and 17.

**Section 103 Rejections:**

Claims 3, 4 and 18 have been rejected as being obvious in view of James and Tsai. Applicants respectfully submit that this rejection is overcome for the reasons set forth below.

Claims 3, 4 and 18 each depends from amended claim 1. Claims 3, 4 and 18 are, therefore, not subject to rejection in view of the cited references for at least the reasons set forth for amended claim 1.

Furthermore, as described above, James does **not** suggest a dipole formed as a pair of dipole microstrips, extending from a pair of launch points.

Tsai discloses a printed circuit board antenna that includes a first dipole antenna element on one side of a printed circuit board and a second dipole antenna element on another side of the circuit board. A feeder element feeds both dipole antennas. Tsai, however, does **not** disclose features of amended claim 1 that are missing from James, namely that each radiating element includes a dipole which is formed as a pair of dipole microstrips, extending from a pair of launch points.

Claims 6, 7-13 and 24-26 have been rejected as being obvious in view of James and Dempsey. Applicants respectfully submit that this rejection is overcome for the reasons set forth below.

Claims 6 and 7-13 depend from amended claim 1. These claims are, therefore, not subject to rejection in view of the cited references for at least the reasons set forth for amended claim 1.

Furthermore, the features of amended claim 1, as described above, are **not** suggested by James.

Dempsey discloses use of a substrate formed from a compound having properties that improve performance of an antenna. Dempsey, however, does **not** suggest any of the features, recited in amended claim 1, that are missing from James.

Claim 24 has now been amended to include features similar to amended claim 1. Claims 25 and 26, which depend from claim 24 are, therefore, not subject to rejection in view of the cited references for the same reasons set forth for amended claim 1.

Claims 14 and 15 have been rejected as being obvious in view of James and Nalbandian. Applicants respectfully submit that these rejections are overcome for the reasons set forth below.

James has been discussed above.

Nalbandian teaches multiple microstrips formed by etching or depositing on a substrate. Nalbandian does **not** suggest any of the features missing from James that are now included in

amended claim 1. Claims 14 and 15 are, therefore, not subject to rejection in view of the cited references for at least the same reasons set forth for amended claim 1.

Claims 19-23 have been rejected as being obvious in view of James and Mohuchy. Applicants respectfully submit that this rejection is overcome for the reasons set forth below.

James has been discussed above.

Mohuchy discloses a transmit/receive network connected to radiating elements. Mohuchy, however, does **not** suggest the features missing from James, namely, each radiating element including a dipole which is formed as a pair of dipole microstrips, extending from a pair of launch points.

Independent claim 21 has now been amended to include features similar to amended claim 1, namely, that each radiating element includes a dipole formed as a pair of dipole microstrips that extend from a pair of launch points. Claim 21 is, therefore, not subject to rejection in view of the cited references for the same reasons set forth for amended claim 1.

Dependent claims 19-20 depend from amended claim 1 and claims 22-23 depend from amended claim 21. These dependent claims are, therefore, not subject to rejection in view of the cited references for at least the reasons set forth for amended claim 1.

Favorable reconsideration is requested for all the claims (claim 2 has been canceled).

### **Conclusion**

Claims 1 and 3-26 are in condition for allowance.

Respectfully submitted,

  
\_\_\_\_\_  
Jack J. Jankovitz, Reg. No. 42,690  
Attorney for Applicant

JJJ/mc

Dated: July 19, 2005

P.O. Box 980  
Valley Forge, PA 19482  
(610) 407-0700

The Commissioner for Patents is hereby authorized to charge payment to Deposit Account No. 18-0350 of any fees associated with this communication.

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail, with sufficient postage, in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22318-1450 on:

7/19/05